CLAIMS

What is claimed is:

1. A method of inhibiting angiogenesis within a tissue, said method comprising providing exogenous PEDF to endothelial cells associated with said tissue under conditions sufficient for said PEDF to inhibit angiogenesis within said tissue.

2. The method of claim 1, wherein said tissue is eye tissue.

3. The method of claim 1, wherein said tissue is skin tissue.

4. The method of claim 1, wherein said tissue is a tumor.

5. The method of claim 1, wherein said tissue is within a joint.

6. The method of claim 1, wherein said tissue is ovarian or endometrial tissue.

7. The method of claim 1, which further comprises supplying another antiangiogenic factor to said cells in conjunction with PEDF.

8. The method of claim 1, wherein said PEDF is provided to said cells by exposing a composition comprising PEDF polypeptide to said cells.

9. The method of claim 1, wherein said PEDF is provided to said cells by transferring to said cells a vector, said vector comprising an isolated nucleic acid encoding PEDF, whereby said PEDF is expressed in and secreted from said cells.

10. The method of claim 9, wherein said isolated nucleic encoding PEDF comprises SEQ ID NO:2.

11. The method of claim 9, wherein said isolated nucleic acid encoding PEDF encodes a biologically active fragment of PEDF.

12. The method of claim 11, wherein said biologically active fragment of PEDF is contained within the amino acid sequence of SEQ ID NO:1.

13. The method of claim 12, wherein said biologically active fragment of PEDF comprises from amino acid 44 and amino acid 121 of SEQ ID NO:1.

14. The method of claim 12, wherein said biologically active fragment of PEDF comprises amino acids 44-77 of SEQ ID NO:1.

15. The method of claim 1, wherein said PEDF comprises SEQ ID NO:1.

16. The method of claim 1, wherein said PEDF comprises a biologically active fragment of SEQ ID NO:1.

17. The method of claim 16, wherein said biologically active fragment of PEDF comprises from amino acids 44 to amino acids 121 of SEQ ID NO:1.

18. The method of claim 17, wherein said biologically active fragment of PEDF is amino acids 44-77 of SEQ ID NO:1.

19. The method of claim 1, wherein said PEDF is provided to said endothelial cells by transfecting into a population of other cells a vector, said vector comprising an isolated nucleic acid encoding PEDF, whereby said PEDF is expressed in and secreted from said other cells, and transferring said population of said other cells so transfected to said endothelial cells.

20. The method of claim 19, wherein said isolated nucleic acid is SEQ ID NO:2.

21. The method of claim 19, wherein said isolated nucleic acid is a biologically active fragment of PEDF.

22. The method of claim 21, wherein said biologically active fragment of PEDF is encoded by a fragment of SEQ ID NO:2.

23. The method of claim 19, wherein transfection of said isolated nucleic acid into said population of other cells results in stable integration of said isolated nucleic acid in the genome of said other cells.

24. The method of claim 1, wherein said PEDF is supplied to said cells via the systemic circulation.

25. The method of claim 1, wherein said PEDF is supplied to said cells via topical administration.

26. A method of inhibiting endothelial cell migration, said method comprising providing exogenous PEDF to said cells under conditions sufficient for said PEDF to inhibit endothelial cell migration.

27. A method of stimulating the growth of hair in a mammal, said method comprising providing exogenous PEDF to cells associated with the skin of said

mammal under conditions sufficient for said PEDF to stimulate the growth of hair in said mammal.

28. A method for inhibiting the growth of a tumor, said method comprising providing exogenous PEDF to endothelial cells associated with said tumor under conditions sufficient for said PEDF to inhibit the migration of said endothelial cells within and to said tumor such that the growth of said tumor is inhibited.

29. The method of claim 28, which further comprises supplying another antiangiogenic factor to said cells in conjunction with PEDF.

30. The method of claim 28, wherein said PEDF is provided to said cells by exposing a composition comprising PEDF polypeptide to said cells.

31. The method of claim 28, wherein said PEDF is provided to said cells by transferring to said cells a vector, said vector comprising an isolated nucleic acid encoding PEDF, whereby said PEDF is expressed in and secreted from said cells.

32. The method of claim 28, wherein said PEDF is provided to said endothelial cells by transfecting into a population of other cells a vector, said vector comprising an isolated nucleic acid encoding PEDF, whereby said PEDF is expressed in and secreted from said other cells, and transferring said population of said other cells so transfected to said endothelial cells.

33. The method of claim 28, wherein said PEDF is supplied to said cells via the systemic circulation.

34. The method of claim 28, wherein said PEDF is supplied to said cells via topical administration.

35. A pharmacological composition comprising a source of PEDF and a suitable diluent.

36. The pharmacological composition of claim 35, wherein said source of PEDF is PEDF polypeptide.

37. The pharmacological composition of claim 35, wherein said source of PEDF is a vector comprising an isolated nucleic acid encoding PEDF.

38. A method of determining the severity of a tumor by assaying for the presence of PEDF within the tumor, wherein the absence of PEDF within the tumor indicates an advanced state and the presence of PEDF within the tumor indicates an

early state of said tumor.

39. A method of inducing differentiation of a neuroblastoma cell, said method comprising administering PEDF to said cell, thereby inducing differentiation of said cell.

40. A method of slowing the growth of a neuroblastoma cell, said method comprising administering PEDF to said cell, thereby slowing the growth of said cell.

41. A method of assessing whether or not a patient will progress from normal vision to severe retinopathy, said method comprising measuring the molar ratio of PEDF to VEGF in the anterior chamber of the eye of a diabetic patient having normal vision, wherein when said ratio is less than about 30, said patient will not progress and when said ratio is about 50 or greater, said patient will progress to severe retinopathy.

42. A kit comprising an amount of an agent for the detection of PEDF and an agent for the detection of VEGF for the measurement of the ratio of PEDF and VEGF in the anterior chamber of the eye, and an instructional material for using said kit.